Assessing the Mobility Value of Tenure to the Faculty Member

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ABSTRACT: Some tenured professors exhibit mobility amongst employers; others could, but do not; still others could not be mobile. The measure of the value of tenure in this paper stems from the potential mobility of the tenured professor. The value of tenure to the professor can be viewed in two ways: generic value of tenure itself and specific value of tenure with a specific employer. This paper will focus on the latter, the specific value of tenure. The specific value of tenure moves inversely with the professor's potential mobility. This paper explores four major variables influencing the mobility of a tenured faculty member: age, marketability, personal preferences, and academic utility.

I. INTRODUCTION

Tenure is an asset. Tenure, in very simple terms, is an employer's guarantee of continued employment following the employee satisfying certain obligations. Although tenure has been most associated with university settings, tenure also is offered in police departments, fire departments, K-12 teaching, and other professions.[1]

Tenure is an asset with some distinctive valuation properties. First, unlike most assets that can be sold in a market, tenure can be owned but can not be sold or transferred to another

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[1] The valuation attributes of tenure can vary materially across the different employment contexts that use tenure. In academic employment contexts the attributes of academic freedom becomes one of value streams. Unquestionably, in the public safety employment contexts, with their paramilitary attributes, free speech value streams such as academic freedom are minimized. Additionally, each employment context is populated with persons of presumed similar preferences. For example, the academic employment contexts are viewed as being populated by persons with a preference for a life of the mind over a life centered on cash. Accordingly, one value stream of tenure in an academic context is the increase of certainty of employment and its concomitant reduction in the need to focus on the less tasteful task of earning an adequate income for one's household.

owner. Tenure is an asset that only can be returned to the person who created it. The second distinctive characteristic of tenure is the monetary value of tenure (ordinarily) is not visible in the market since tenure typically is not the subject of a cash transaction. Tenure is an asset representing (at a minimum) an increased certainty of a cash flow to the grantee. The tenured individual's annual salary is not the value of tenure. Rather, the value of tenure is measured by the increased net present value of the work-life income stream, associated with the cash flow whose certainty is increased by the existence of tenure.

II. THE LEGAL DEFINITION AND REGOGNITION OF TENURE

Tenure is a radical departure from the ordinary "at will" employment law of the USA.[2] While not accurate, tenure often is referred to as lifetime employment. It would be more accurate to say work-life employment subject to a major condition subsequent: termination "for adequate cause".[3] Tenure is a contract right that can rise to the level of constitutionally protected personal property. The courts recognize "tenure" as a personal property right when a government (e.g., State universities) seeks to take the tenure. When "taking" private property, governments are constitutionally required to provide due process, to serve a public purpose,

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[2]   Ordinary agency law provides that neither the principal nor the agent must continue the agency: both have the legal power to terminate the agency immediately. While both may have the legal power to terminate the agency; both, either, or neither may have the legal right to terminate (and often that legal right requires the giving of reasonable notice to the other party). Accordingly, exercising the power, without the right, to terminate creates legal liability.

[3]   here are three major forms of "for adequate cause" termination. FIRST, the institution granting tenure may fall under such severe financial problems that its governing board will take the extraordinary step of declaring a "financial exigency". Such a declaration is subject to, at most, minimal judicial review for good faith because the consequences for the declaring institution are sufficient to cloak the declaration in presumptive believability. Creditors of all stripes, not just faculty, will be alarmed by such a declaration. SECOND, the employer may decide to terminate the entire program that hosts the employee's job. Typically, employers make genuine efforts to relocate employees upon program termination because of the employer's reputational benefits from respecting tenure even during strategic repositioning. THIRD, the quality of the faculty member's performance can trigger a "for adequate cause" termination. If the institution objectively proves, to a quasi-judicial panel of faculty peers, that the faculty member's performance is less than minimally acceptable (e.g., onset of disability permanently prevents performance by the teacher), then the institution unquestionably gains the legal right to terminate the tenure. This process consumes a considerable amount of time, administrative effort, and political capital, and thus is used infrequently. There are three other reasons this process is used infrequently. FIRST, the performance of most faculty is unambiguously above the level of minimally acceptable. SECOND, if the out-come of the quasijudicial process is obvious (e.g., faculty member caught red handed falsifying research results), then a resignation will obviate the need for the tribunal. THIRD, both parties can reap substantial gains via a negotiated departure when there is a contested "for adequate cause" allegation and there is uncertainty as to the outcome of the requisite due process. In closing, one should recall that the fundamental purpose of tenure is to increase the certainty of a cash flow via a reduction in the institution's freedom to terminate for reasons unrelated to the faculty member's performance (e.g., professing of unpopular ideas and/or reduced demand for the professor's output). In this context, a low frequency of termination is to be expected.

and to pay just compensation.[4] Mere regulation is not a "taking". Accordingly, tenure is not "taken" when due process is used to prove the "for adequate cause" termination; rather, that proof of the requisite contractual condition precedent that then amounts to mere regulation. Tenure varies by context. This article will focus on college professors.

Valuation, especially damages valuation, is done with resort to the legal fiction of an arm's length transfer between a willing buyer and a willing seller, both fully informed of all material facts. A wrongful act, either by the employer or some other person, that deprives faculty member of the use of the tenure asset would prompt a damages valuation as if the tenure had been transferred in this fictional arm's length transfer.[5]

Tenure, as an asset, is an option. The faculty member holds the option to continue the cash flow of salary (plus reasonably expected merit pay increments[6]) in exchange for delivery of services. The wrongful loss of tenure includes the loss of these merit increments, and thus

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[4]   See, USA *Constitution*, Amendment V. Note that tenure held at a *public* university is not protected in the same way as tenure at a *private* university. As "due process" is constitutionally understood, due process is owed by governments to persons, but due process is not required in transactions between private parties (e.g., tenure at a private university). However, the traditions common to all USA universities that surround "tenure" make this distinction far less significant in practice. (Might this similarity of traditions spring from an expected market response diminishing the value of an appointment at a private university should that university choose *voluntarily* to not extend due process when seeking to terminate tenure?) Tenure is both an intangible personal property and a contract right at a public university, while tenure most likely is no more than a contract right at a private university. This distinction will be important in terms of characteristics of the lawsuit enforcing tenure, including the nature and scope of damages.

[5]   Also note, a voluntarily relocating or a voluntarily retiring professor, in effect, transfers tenure back to the employer. The faculty member's voluntary decision to surrender of tenure may be viewed either positively or negatively by the employer as well as may prompt a cash payment from the employer.

An employer may view voluntary return positively for a variety of reasons. For example, the institution may desire benefits from rebalancing its staff in light of shifting student demand or shifting institutional strategic foci. If the employer gains by the voluntary surrender, then the employer should be willing to compensate a faculty member for the voluntarily surrendered tenure so as to prompt acceleration of such beneficial terminations. "Early out" retirement inducements are one form of such compensation. Conversely, an institution may wish to avoid a voluntary departure if the replacement market for the professor is a seller's market. Then, the institution should be willing to compensate to induce employment longevity. Salary compression adjustments are such compensations.

These compensations (e.g., early out and compression adjustments) are times when the value of tenure becomes a visible market transaction in cash. However, these revealed preferences are not wholly accurate since the institution (typically) simultaneously seeks to accommodate all remotely similarly situated claimants, rather than dealing individually with each faculty member. Because of a misreading of the equal employment opportunity laws and/or minimal managerial courage and ability, early out inducements and the salary compression adjustments (typically) are extended equally to all faculty. Therefore, these revealed values only reveal the willing buyer's *average value across all faculty*, and most likely reflects a substantial discount for a reasonably feared adverse selection.

[6]   Academe has a tradition, as most workplaces do, of annual salary adjustments. These annual adjustments seek to reflect both price level changes and demonstrated merit. There have been periods of sustained real decreases and periods of sustained real increases in total payroll for all faculty. Regardless of the deflationary or inflationary trends, employers attempt to offer an additional increment for merit. In deflationary years, the best professors may be rewarded with a smaller real decrease in salary.

these merit increments can be a measure of the value of tenure.[7] Tenure shifts financial risks between the faculty member and the university. As a financial comparative, the value of tenure can be compared to owning shares in a close corporation. Shareholders of a close corporation only may sell their shares back to the corporation when they wish to dispose of their shares.[8] So too with tenure: there is but one lawful buyer of the asset.

III. VALUATION PERCULARITIES

Some tenured professors exhibit mobility amongst employers; others could, but do not; still others could not be mobile. The measure of the value of tenure in this paper stems from the potential mobility of the tenured professor. The value of tenure to the professor can be viewed in two ways: generic value of tenure itself and specific value of tenure with a specific employer. This paper will focus on the latter, the specific value of tenure.

The generic value of tenure to a faculty member could include intangibles such reputational market signaling of quality and insurance against the loss of mobility. These intangible sources of generic value are not discretely estimated by the technique described in this paper. Rather, these generic values are embedded in the specific value estimated in this research.[9] Accordingly, the specific value of tenure, T, is a maximum value for tenure owned by the specific faculty member. This specific value of tenure is a mobility-reduced value of tenure. If faculty are mobile, then faculty place a lower economic value on continued employment with a specific employer.

This paper will explore four major variables influencing the mobility of a tenured faculty member and thus influencing the value of tenure to that professor. Those four major variables are: age, marketability, personal preferences, and academic utility.

The specific value of tenure moves inversely with the professor's potential mobility. Mobility is the ability to move to a like employment situation.[10] A professor who can move instantly[11] to a like employer does not place a high specific value on tenure. In contrast, a

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[7]   Henderson, Linda, Boyles, Gerald V., and Eason, James F. "What Price Tenure?: Valuing Tenure Held by Faculty in Schools of Business." *Proceedings of the Southeast Institute for Operations Research and the Management Sciences*, v. 32, Oct. 1996, p. 239 - 241.

[8]   Mitenko, Graham and Henry Okleshen. "Valuing a Non-Publicly-Traded Business: A Review and Update", *Journal of Legal Economics* (1998), vol. 8, no. 2, p. 33-48.

[9]   Discretely estimating the magnitude of such generic values embedded in the specific value will be reserved for future research.

[10]   "Definitions of 1994 Carnegie Classifications", CHRONICLE OF HIGHER EDUCATION, November 24, 2000. 1994 Carnegie Classification: Research I; Research II; Doctorial; Comprehensive I; Comprehensive II; Baccalaureate; and Associate of Arts College. Lively, Kit. "Changes Planned for Carnegie Classifications." CHRONICLE OF HIGHER EDUCATION, November 5, 1999. In 2000, of the three areas of categories two were changed. The Masters focused "Comprehensive" categories were not changed. The top four categories of 1994 were collapsed into two categories and the bottom four categories of 1994 were redefined. As a result, the 2000 Carnegie classification system changed to: Doctoral, Research I (e.g. extensive); Doctoral, Research II (e.g., intensive); Comprehensive I; Comprehensive II; Baccalaureate (Liberal Arts) Colleges I; Baccalaureate Colleges II; Associates Colleges.

[11]   "Instantly" is an overstatement in academe. "Immediately" means at the end of this academic semester, or more typically at the end of this academic year. The production function of academe limits hiring to within three relatively narrow windows of time during the calendar year. By far the most new hires start work in August or September, with those job offers typically being made between October and February. Relatively few offers are

professor who can not move (for whatever reason)[12] places a high specific value on the guaranteed cash flow. Potential mobility is influenced by many variables. Some of these variables are, and some are not, under the control of the professor. In this paper, the authors theorize that four major variables influence the mobility-reduced value of tenure. In turn, each major variable is driven by a set of minor variables. The four major variables are: age, marketability, personal preferences, and academic utility.

$$T = f (A, M, U, P), \hspace{3cm} \text{Eq. 1}$$

where:

A	=	professor's Age score, and $A = f (CH, CA)$;
M	=	professor's Marketability score, and $M = f (TO, D, EM, CTH)$;
P	=	professor's personal Preferences score, and $P = f (H, F, B, G)$; and
U	=	professor's academic Utility score, and $U = f (T, R, S)$.

Figure 1, entitled "Major Variables and their Minor Variables", identifies the vectors theorized as most relevant to determining faculty mobility and hence the mobility-reduced value of tenure. Additionally, see Appendix A, entitled "Variable Explanation", for the full list of variables as well as explanation of their input.

For the sake of brevity, this paper will explore in detail only the first minor variable of each of the four major variables. This abbreviated treatment should prove to be a sufficient introduction and allow the reader to replicate the treatment of the other variables.

The four major variables are assembled in an additive function as are each of the minor variables. Also, each variable within a set, whether the set of major variables or a set of minor variables, is weighted equally within that set. The scoring and weights of the variables will result in a mobility score, t, between zero and one. The mobility-reduced value of tenure, T, is a percentage. This is the percentage of the faculty member's net present value of the expected work-life income stream with that employer that the employee specifically values as "tenure". This percent is found by subtracting the faculty member's mobility score, t, from one.

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made at other times of the year. Accordingly, both departing faculty and terminating employers typically are obligated to provide ample notice of the exercise of the power to terminate. Typically, that notice is due in March, but not the same March. Faculty must give notice the March immediately prior to departure in August (i.e., 5 months notice), while the employer must give notice the March prior to the last academic year (i.e., 17 months notice) to allow a job search during the peak hiring season. See footnote 1 for a discussion of the power versus the right to terminate. See Figure 2 that graphs how the value of T varies with chronological age, and how T peaks just prior to retirement.

[12]   When a professor can not move because of incompetence, then the public rightfully begrudges tenure. However, when a professor can not move for reasons unrelated to incompetence, then tenure is a financial asset, an option, and does not deserve the negative connotations some attach to tenure. For an exploration of the relatively low rate of mobility, see, Nagowski, Matthew P. "Associate Professor Turnover at American's Public and Private Institutions of Higher Education", *The American Economist*, Volume L, Number 1, Spring 2006, pp. 69 - 79. Also on the issue of limited mobility, see, NBER Working Paper No. 12157, "The Macro-Foundations of Microeconomics: Initial Labor Market Conditions and Long-Term Outcomes for Economists", April 2006. (a.k.a., The Roach Motel model of academic careers: http://www.slate.com/id/2142489/).

FIGURE 1
MAJOR VARIABLES AND THEIR MINOR VARIABLES

1.
AGE
CHRONOLOGICAL
Years Since
Birth

CAREER
Years Since
Terminal Degree

2.
MARKETABILITY
TOTAL OUTPUT
Overall Impression
of Teaching, Research, & Service

DISCIPLINE
1) Prime Discipline
2) Sub-discipline

EXTERNAL MARKET
1) Budgetary Constraints
2) Demographics
3) Supply and Demand
4) Barriers: Entry & Exit

CURRENT TENURE HOME

3.
PERSONAL PREFERENCE
HEALTH ISSUES
1) Own
2) Dependants

FAMILY ISSUES
1) Trailing Spouse
2) Children's Needs
3) Educational Opportunities
4) Parents

BENEFIT STRUCTURE
1) Enrollment
2) Deferred compensation
3) Time Flexibility

GEOGRAPHICAL PREFERENCES
1) Amenities
2) Weather
(See also Family Issues above)

4.
ACADEMIC UTILITY
TEACHING
1) Student evaluations
2) Multiple Topic

RESEARCH
1) Agenda
2) Productivity
3) Collaboration
4) Funded Research

SERVICE
1) Community Linkages
2) Fund Raising

$$T = (1 - t) = (1 - [aA + bM + cP + dU]), \qquad\qquad\qquad \text{Eq. 2}$$

where:

T	=	mobility-reduced value of tenure, that is, a percentage of the expected income stream at that employer; and
t	=	professor's mobility score, ranges between zero and one; and

subject to:

a, b, c, d	=	sum = 1 and each ranges between 0 and 1 (initially assuming equal weights of 25%); and
A, M, U, P	=	each ranges between 0 and 100.

Importantly,[13] if any one of the minor variables takes a value of 0, then this research does not force a value of 1 on T, but that does force a value of 0 on the corresponding major variable (i.e., A, M, U, and P).[14]

Now turn to the example of the major variable "Age". "Age" has two minor variables: chronological age and career age (i.e., CH and CA). Chronological age is the traditional age measured in birthdays. Career age is measured years since awarding of the terminal degree (e.g., Ph.D.).

The effect of chronological age on the mobility-reduced value of tenure, T, is displayed in Figure 2. Chronological age is on the horizontal axis and the mobility-reduced value of tenure (due to chronological age) is on the vertical axis. Figure 2 shows little specific value for tenure when mobility is high and great specific value of tenure when mobility is low. As chronological age increases and reaches the zone of age discrimination the mobility score, t, drops and the mobility-reduced value of tenure, T, increases.
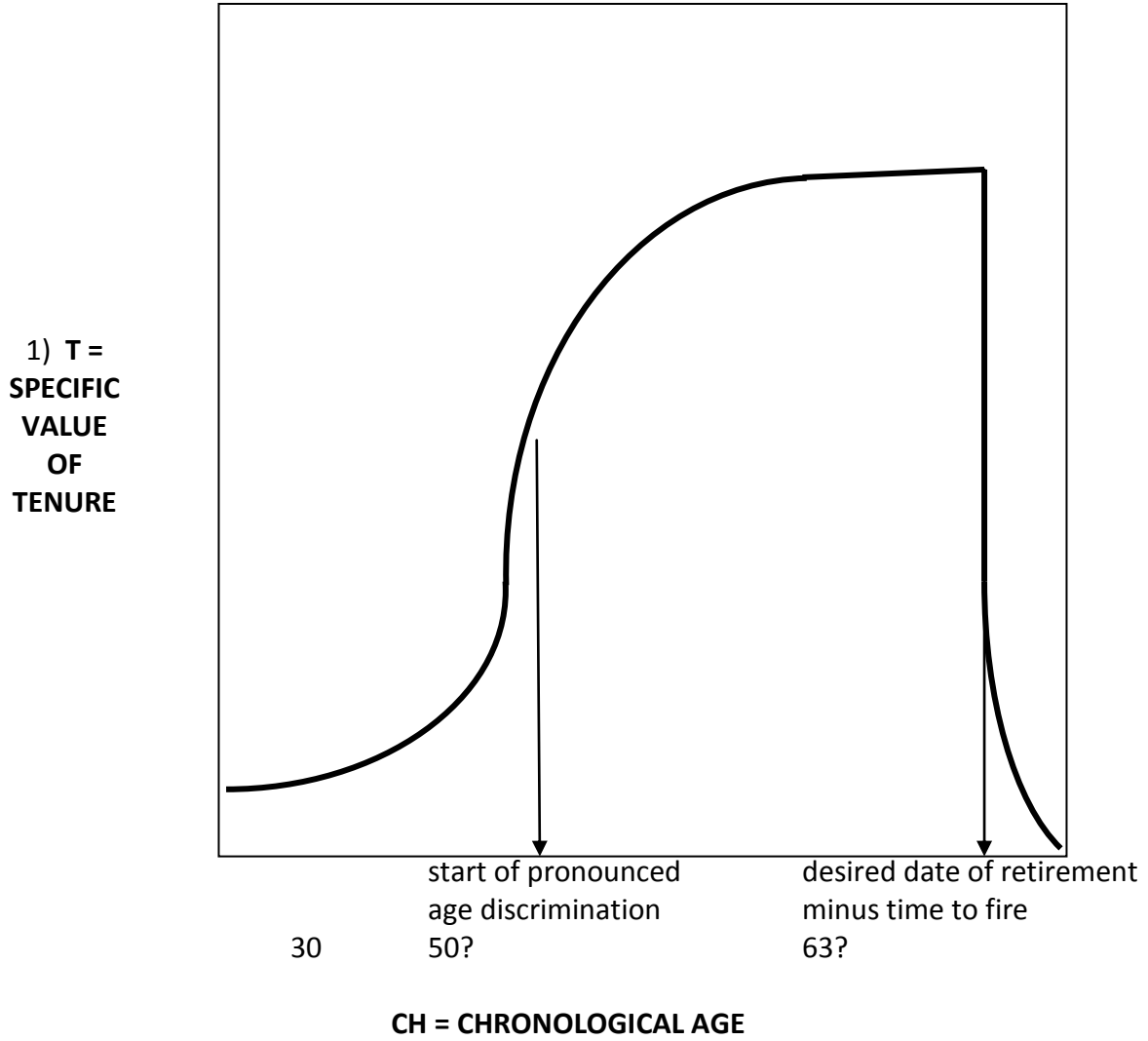
Academe has a pronounced preference for new hires at the (typically) least expensive,[15] most controllable (i.e., actively in pursuit of tenure), and at the cutting edge (i.e., presumption

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[13]   This research would be fundamentally misunderstood and mischaracterized if it were portrayed as measuring the value of lifetime employment for the incompetent. This research focuses on mobility. Incompetence can cause immobility, but immobility is far more likely to spring from some other minor variable. For example, an uninsurable spouse might render a faculty member immobile. Additionally, one should note that if a faculty member is genuinely incompetent and has not been dismissed, then that speaks volumes about the quality of management at that institution. Dismissal of incompetent faculty "for adequate cause" is both feasible and the duty of every academic manager.

[14]   The structure of this formula is additive. If the structure had been multiplicative, then t automatically would have been forced to take a value of t = 0 if any one of the minor variables presented a value of 0. Additionally, a multiplicative structure generates very small decimals when there are four major variables each with its own weighting coefficient. Such small a multiplicative structure would obscure the source of and magnitude of contributions to values of t other than a forced value of 0.

[15]   In those fields confronting pronounced salary compression one might expect to see senior faculty of equal or greater caliber displacing "expensive" new hires and thus retaining mobility because of the possibility of a win-win move. The faculty member could change employers and get a higher salary while at the same time the university could obtain a proven worker at less than market. However, the market routinely refuses to make such transactions. Institutions so predictably refuse to make such win-win hires because of a variety of reasons (e.g., unwilling to *partially* address salary compression; legitimate concern for age profile of entire faculty, etc.) that senior faculty cease applying for "junior" openings.

FIGURE 2
SPECIFIC VALUE VARIATION DUE TO CHRONOLOGICAL AGE

1) **T =**
SPECIFIC
VALUE
OF
TENURE

start of pronounced
age discrimination

desired date of retirement
minus time to fire

30   50?   63?

CH = CHRONOLOGICAL AGE

based on recent completion of graduate school). Both chronological age and career age track this. As the mobility score, t, decreases, then the specific value of tenure, that is, the mobility-reduced value of tenure, T, increases. Each chronological age is given a mobility score of between 0 (not mobile) and 1 (instantly mobile). Accordingly, slight increases in chronological age after mid-career generate significant reductions in the mobility score, t; and, that reduced mobility score, in turn, markedly increases the mobility-reduced value of tenure, T.

Chronological age is a non-linear minor variable. At first blush, increases in both "Age" measures should be associated with an increase in experience and mobility. However, due to informational asymmetries and managerial predilections, the market develops a pronounced aversion towards older faculty (e.g., age discrimination), thus reducing the mobility scores of faculty as chronological age increases. As chronological age increases an employee remains mobile until approximately 50 years of age. As shown in Figure 2, the T value peaks prior to the faculty member's desired retirement age. Academic institutions have traditions that prevent summary dismissal: the dismissal process typically results in notice of more than 15 months.[16] The institution typically has an administrative process that is purposefully designed to allow for and encourage thoughtful deliberation, which takes time. That duration consumed by the host employer's termination processes acts as a proxy for tenure for those who have not yet earned tenure. Accordingly, the specific value of tenure plummets not at retirement, but just prior to retirement. The time consumed in terminating a faculty member must be subtracted from the faculty member's expected retirement date to find the peak of the mobility-reduced value of tenure.

Employing the four major variables, this research fashions a value of tenure that is an inverse function of the professor's mobility. Employing these four major variables, this research calculates a mobility score, t, that reduces that professor's value of tenure, T. The mobility-reduced value of tenure, T, is found by subtracting the mobility score, t, from one, yielding the percentage of annual income specifically valued as "tenure". A t value of 0 indicates the professor can not move and the T value is 100%. A t value of 1 indicates that the professor can move freely and thus places a 0% value on tenure with the current employer. In turn, each of the four major variable scores is a function of a set of minor variables unique to that major variable.

The value of tenure can be separated into its specific value and its generic value. The professor's specific value of tenure is a function of the professor's age, marketability, personal preferences, and academic utility as those variables influence that professor's mobility. The calculated specific value of T is a percentage that is multiplied times the net present value of the professor's expected work-life income stream with that employer. This T is a maximum measure of the professor's specific value of tenure. Unlike the immobile professor, a mobile professor does not draw most of the value tenure from the NPV of the professor's work-life income stream *from that employer*. A mobile professor still receives generic value from tenure, but far less than an immobile professor. For a mobile professor tenure still holds the generic

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[16]   See endnote 10.

value via reputational benefits and insurance against the risk of the loss of mobility.[17] The calculation of the specific value of tenure starts with the maximum value of tenure set equal to the NPV of the professor's work life earnings at that employer. That maximum value is then reduced by the mobility score stated as a percent. The mobility-reduced value of tenure, T, is the specific value of tenure for the immobile professor. Embedded in the mobility-reduced specific value of tenure is the generic value of tenure, including the reputational and insurance values of tenure. The largest objective specific value of tenure would be 100% of the professor's work life income stream *from that employer*. This calculation reduces that maximum. That maximum is reduced by what is likely to be the most significant source of over estimation of specific value for a professor: mobility.

The relative weightings of the major variables and of the minor variables in this paper are assumed to be equal within each set of variables.[18] In each instance, this research assumes pro rata weighting based on the number of variables in the set. That is, the four major variables are each assumed to take identical 25% weights in the form of a, b, c, and d. Next, the minor variables are equally weighted. For example, the major variable age, A, is specified as a function of chronological age and career age: i.e., f (CH, CA). In turn, scores for chronological age, CH, and for career age, CA, are equally weighted. That is:

$$A = [(CH + CA) / 2] = (0.50\ CH + 0.50\ CA). \hspace{3cm} Eq.\ 3$$

Each major variable has multiple minor variables. While as the number of minor variables changes in the divisor, the equal weighting of their minor variables would not. The assumed weight of each minor variable is 1/n where n is the number of minor variables.[19]

When measuring a minor variable over its range, our default assumption is linearity over that range. Non-linear values could, in fact, be the norm. For example, the impact on mobility of the minor variable chronological age, CH, surely is non-linear. There are a host of laws prohibiting age discrimination precisely because the hiring process is not purely linear (let alone, horizontal). Figure 2 displays a likely shape to this non-linear score. The first entry in Figure 3 shows the same information as in Figure 2, this time displaying that information on a continuum rather than a graph.[20]

The mobility-reduced value of tenure, T, is forced to take a value between zero and 1. The mobility score, t, will be subtracted from one yielding the percent of net present value of the

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[17]   Calculating the reputational value of tenure and the insurance value of tenure should be subjects of future research. As an example of such research see, Burkett, Justin "How Much Will People Pay for Status?", *The American Economist*, volume L, Spring 2006, Number 1, pp. 80 - 87.

[18]   These two simplifying assumptions should be the subject of future research.
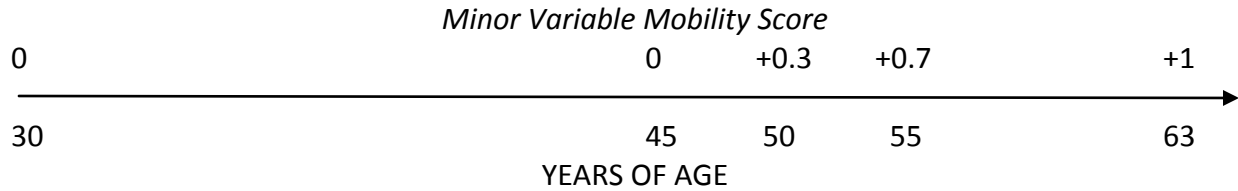
[19]   Note, these weightings can be thought of in two very different ways. FIRST, every individual faculty member will have an idiosyncratic set of weightings as each minor variable and each major variable with be uniquely experienced by that faculty member. For the individual faculty member each weight is a discrete value. SECOND, across the aggregation of all individual faculty members there will be a central tendency measure of the weightings with some distribution around that central tendency.

[20]   A major focus of future research includes specifying when and to what degree these continuums are nonlinear and, in particular, where on a continuum a critical mass is reached.
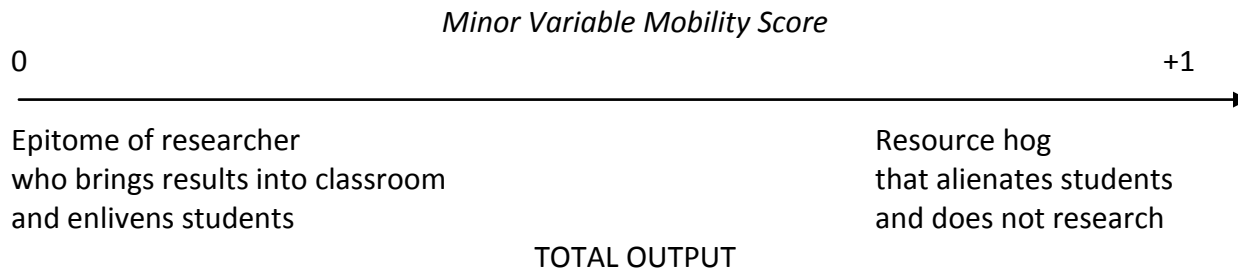
FIGURE 3
VARIABLE MEASUREMENT
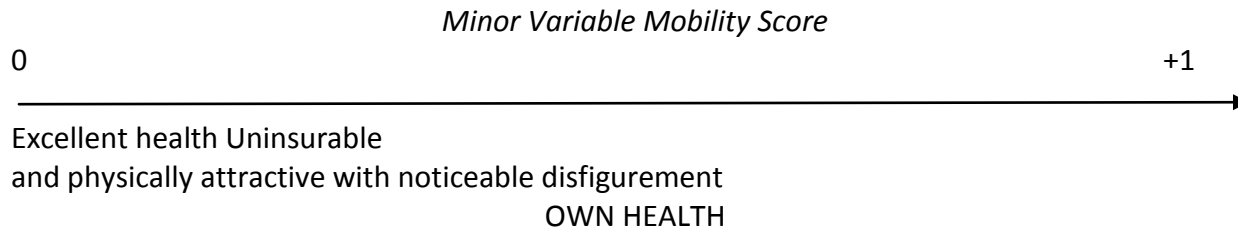
AGE

1) CHRONOLOGICAL AGE (see Figure 2)

Minor Variable Mobility Score

| 0 | 0 | +0.3 | +0.7 | +1 |

| 30 | 45 | 50 | 55 | 63 |

YEARS OF AGE

MARKETABILITY

1) TOTAL OUTPUT

Minor Variable Mobility Score

0   +1

Epitome of researcher   Resource hog
who brings results into classroom   that alienates students
and enlivens students   and does not research

TOTAL OUTPUT

PERSONAL PREFERENCES

1) HEALH ISSUES

Minor Variable Mobility Score

0   +1

Excellent health Uninsurable
and physically attractive with noticeable disfigurement

OWN HEALTH

ACADEMIC UTILITY

1) STUDENT EVALUATIONS

Minor Variable Mobility Score

0   +1

Multiple awards Insufferable
and glowing evaluations & unintelligible

STUDENT EVALUATIONS
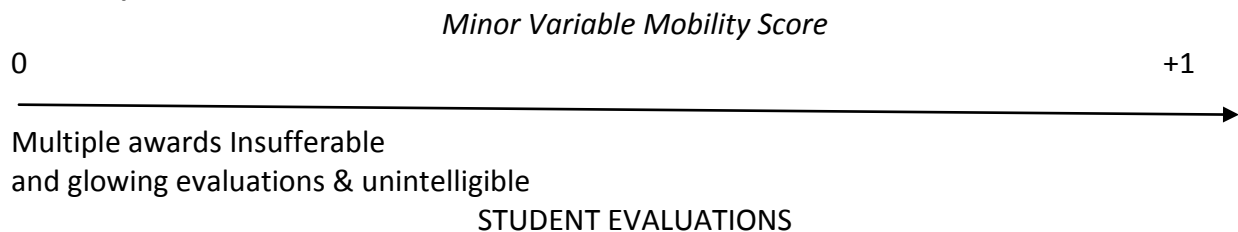
work-life income stream for that professor with tenure with that specific employer. Accordingly, when professor's mobility is high, then t is large, and T will take a value near zero. A value of T near zero indicates that the mobile professor has a small monetary specific value in tenure because the professor easily can move and replace the current work environment and benefits. Conversely, when a professor is immobile tenure has a high specific value. An immobile professor has a small t, and thus T takes a value near 1 indicating a high specific value of tenure for that tenured professor because the professor can not instantly substitute comparable employment via another employer.

To deepen and broaden the coverage of these major variables and their minor variables, turn now to Figure 3 entitled "Variable Measurement" and Appendix A entitled "Variable Explanation". Figure 1 merely lists the major variables and their minor variables while Appendix A provides a detailed explanation of each major variable and each of its minor variables. Figure 3 offers a set of Likert Scales for measuring some, but not all of, the minor variables. As the continuums in Figure 3 display, initially judgment will identify when to depart from a default assumption of linear contribution to the mobility score. The reader should recall the additive relationship between the major variables; as well as recall the requirement that any one variable, minor or major, can force a mobility score of zero and thus trigger maximum value of tenure.

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8.   USA *Constitution*, 1789.

APPENDIX A
VARIABLE EXPLANATION

NOTE: The mobility-reduced value of tenure, T, takes a forced value of 1, that is because the mobility score, t, takes a forced value of 0, if any one minor variable takes a value of 0. Any one minor variable can render a faculty member immobile. Otherwise, the major variables are equally weighted and their minor variables are equally weighted.

1. AGE

CH = CHRONOLOGICAL AGE: is measured by calendar age. See Figure 2. The likelihood of finding equal or higher status positions is first directly related to increases in chronological age and experience, but then is inversely related as age discrimination sets in.

CA = CAREER AGE: is measured by the number of years since terminal degree. The rebuttable presumption is that with each year added to CA, the employee is less current. Experience could increase with CA and currency of skills should be maintained. However, if the individual's publication output does not keep up, then CA reduces mobility.

2. MARKETABILITY

TO = TOTAL OUTPUT: especially research, but also teaching and service. This is an overall impression of the faculty member as a colleague. It is an *overall impression* the faculty member's entire career, with an attention to the per year average as well as any recent trends. Some stars burn brightly, but burn out; while others create a steady glow.

D = DISCIPLINE: has two minor variables: prime discipline and sub-discipline.
      prime discipline: the demand for faculty varies by discipline (e.g., finance versus history in the 1990s). A prim discipline in high demand allows all faculty in that discipline to be more mobile. History has faced periods of an applicant-to-job ratio of 100:1, while at the same time that ratio in finance was 1:2.
      sub-discipline: certain sub-disciplines are in even greater demand, for example, international finance in the 1990's faced a ratio of 1:5.

EM = EXTERNAL MARKET:
      budgetary constraints: relative budgetary abundance
      demographics: enrollment and retirement bubbles, arriving and bursting, influence the number of new openings.
      supply and demand: The supply of new terminal degrees (e.g., Ph.D.s) and the demand for new terminal degrees overall as well as by specific discipline also influence the market. For example, an economics Ph.D. might substitute for finance.
      barriers to entry and exit: Access to tenured faculty positions, generally, is limited to those with a terminal degree (e.g., Ph.D.). Some terminal degrees are more difficult (e.g.,

physics) others have fewer openings (e.g., veterinary). A barrier to entry reduces supply of faculty, increases the mobility of faculty, and reduces the specific value of tenure. Limited equivalent opportunities outside academe (e.g., English), both increase the supply of applicants and retard exit, thus reducing mobility and increasing the specific value of tenure.

CTH = CURRENT TENURE HOME: The current tenure home has a "halo effect" affect on the tenured professor. The current tenure home signals the quality of all those tenured there. Each member of that faculty has extra cache.

3. PERSONAL PREFERENCES

*H = HEALTH ISSUES***:**

own: health has more of a negative impact than a positive impact. As a class, faculty are healthier than the surrounding society. If a professor has a health issue, then it can reduce mobility. For example, allergies will limit acceptable work locals or reduced vision may necessitate superior access to and quality of public transit. This minor variable may be visible to the market (e.g., paraplegic) or may not be visible to the market (e.g., hearing loss). The physical attractiveness of faculty can be an issue because teaching is a form of public speaking; typically, this is not a significant concern. However, a noteworthy variation in physical attractiveness can significantly increase or reduce the mobility score.

dependants: The health of dependants can be far more significant than the health of the faculty member (e.g., magnification of social transaction costs) and dependent health tends to not be visible to the market. See also below in Benefits Structure.

*F = FAMILY ISSUES***:**

trailing spouse: A spouse that is employed outside the home, typically, is reluctant to discontinue that career. That trailing spouse's ability to sustain that career in a new environment will be critical. A "trailing spouse" almost always reduces mobility because the joint probability of finding two jobs is lower than the probability of finding one job. Only if the spouse is very mobile (e.g., emergency room nurse) relative to the faculty member does a trailing spouse have no effect on the faculty member's mobility score. A homemaker with a network of volunteer engagements is a trailing spouse.

children: Children tend to not retard mobility at younger ages and to significantly retard mobility at high school age. Children also can exhibit characteristics of a trailing spouse: see educational level and special needs.

educational level: Some children present unusual education requirements, at both ends of the spectrum. There tends to be a very wide variation in the ability of each locality's ability to satisfy such unusual educational requirements. Parents generally, and faculty particularly, tend to place a very high priority on insisting that such requirements be satisfied.

special needs: Some children (probably far fewer than their parents perceive) possess superior skills as athletes or musicians or have particularized health requirements (e.g., allergies). Parents will prioritize these special needs and these rarely will be visible to the market.

parents: Faculty have parents. The desire to be close to grandparents or to attend to the needs of elderly parents can be a strong draw. The location magnet of extended family, once adjacent, will significantly reduce mobility; and if afar, will motivate mobility.

***B = BENEFITS STRUCTURE*:** The benefits at the current place of employment can be golden handcuffs. The cost of the transfer may be prohibitive because of insurability issues. See also Health Issues above.

enrollment: While the federal COBRA rules are standard, the open enrollment rules (e.g., no coverage for expenses in the first six month) vary widely. The fear of no coverage is probably greater than the risk.

deferred compensation: The magnitude of TIAA-CREF match, and the physic income of the current employer can be a strong attractor that reduces mobility.

time flexibility: Some employers enhance a faculty member's control over their time, this reduces mobility. The duration of the educational period (e.g., quarter versus the semester system), the magnitude of committee assignments, and the expected community engagements all influence real wages and mobility.

***G = GEOGRAPHIC PREFERENCES*:**

amenities: Faculty, with their greater time flexibility, are drawn towards superior weather, geologic attractions (e.g., lakes, mountains), and are drawn towards social amenities such as the arts and eateries. Once a faculty member has located adjacent to their desired mix, mobility is reduced.

location advantages: In additional to the local attractors of family and amenities, there also is the issue of ease of transportation and other infrastructures that support the faculty member (e.g., Internet 2).

4. ACADEMIC UTILITY

***T = TEACHING*:** Clearly, this is critical, but also clearly, this is very difficult to measure. The advent of teaching portfolios might have added clarity to some forms of teaching. Demonstrated ability is a mandatory minimum.

student evaluations: The opinions of the "customer" can be important. Particularly noteworthy would be teaching awards at the departmental, the college, and/or the university levels.

multiple topics: A faculty member who can teach only one topic is less useful to a college, and thus less mobile.

***R = RESEARCH*:**

agenda: A faculty member with a research agenda is more likely to be productive on many fronts. Some agendas are in higher demand (e.g., technology management).

productivity: The ordinary units of research output, presentations, and publications.

collaboration: The advertising impact of a faculty member for the institution as well as the leveraging of resources are increased by collaboration with faculty at other institutions.

funded research: A researcher that brings external funds to campus helps both that researcher and all others via the halo effect and the recovery of indirect costs.

*S = SERVICE***:** Ordinarily, service (e.g., committees) counts for little within academe because it is expected of all. However, there are some forms that do add value to the institution.

community linkages: A faculty member with a demonstrated propensity to become active in the community and assume leadership positions increases the strength of the institution in its home market.

fund raising: The best donors already know you. A faculty member who engages in outreach increases the success of the institution's fund raising efforts.